

35

to generate said second proposed password in a manner that is memorable to said user based on said user's first proposed password;

deriving a modified complexity value of said second proposed password based on said context-free grammar;

5 comparing said modified complexity value of said second proposed password and said threshold complexity value, said second proposed password accepted as sufficiently complex as a result of said second proposed password meeting said threshold complexity value,

10 said second proposed password rejected as not sufficiently complex as a result of said second proposed password failing to meet said threshold complexity value; and

suggesting said second proposed password to said user as a result of said second proposed password accepted as sufficiently complex.

9. A tangible non-transitory computer-readable media as in claim 8, further comprising the steps of:

receiving one or more dictionaries, said step of generating said probabilistic context-free grammar further including generating said probabilistic context-free grammar from said one or more dictionaries; and

utilizing said one or more dictionaries to generate a plurality of password guesses in highest probability order to determine said threshold complexity value.

25 10. A tangible non-transitory computer-readable media as in claim 8, further comprising the step of:

updating said probabilistic context-free grammar with at least one new password selected from the group consisting of said first proposed password, said second proposed password, and an additional plurality of control passwords.

30 11. A tangible non-transitory computer-readable media as in claim 10, further comprising the step of:

increasing an entropy value of said context-free grammar as a result of said at least one new password having a sufficiently low probability to increase said entropy value.

35

36

12. A tangible non-transitory computer-readable media as in claim 8, further comprising the step of:

parsing said first proposed password into said base structure containing a plurality of components,

said modification step including modifying said base structure or said plurality of components with said limited modifications.

13. A tangible non-transitory computer-readable media as in claim 8, further comprising:

10 said limited modifications selected from the group consisting of an insertion operation, a deletion operation, a substitution operation, a transposition operation, and a case operation.

15 14. A tangible non-transitory computer-readable media as in claim 13, further comprising:

said first proposed password having a base structure containing a plurality of components;

said insertion operation containing rules such that an inserted component is of a different type than a component selected from the plurality of components, said component being adjacent to said inserted component;

said deletion operation containing rules such that a deleted component has a length greater than one (1) and removal of said deleted component does not cause two of the same type components selected from said plurality of components to become adjacently positioned;

said substitution operation containing rules such that a first character is substituted with a second character, said first character and said second character being of a same type; and

said transposition operation containing rules such that transposing a first component and a second component does not cause two of the same type components selected from said plurality of components to become adjacently positioned.

* * * * *